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A checklist of xylophilous basidiomycetes (*Basidiomycota*) in mangroves

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Abstract — Based on intensive search of literature records of xylophilous basidiomycetes in mangroves, a list with 112 species is presented. These species are distributed in 63 genera, 27 families and 9 orders. *Polyporaceae* is the most represented family with 33 species; *Phellinus* is the genus with the highest number of species (7). Brazilian mangroves, with 55 species, are the best known areas. The most frequent host is *Rhizophora mangle* with 34 species recorded on it. For each species the localities and substrates are provided, when these data were available in the respective original article. The complete checklist is available on http://www.mycotaxon.com/ resources/weblists.html.

Key words — *Agaricales*, *Aphyllophorales*, *Auriculariales*, mycodiversity

Introduction

Mangroves are transitional coastal ecosystems situated at the confluence of land and sea (Alongi 2002). Their distribution is closely related to basic features of the marine environment, mainly salinity (Chapman 1977). The atmospheric temperature also influences the distribution of mangroves and they are found mostly in the tropics; however under special climatic conditions they occur in subtropical regions, such as Japan and the State of Santa Catarina in Brazil (Cintrón & Schaeffer-Novelli 1980).

Although tropical forests typically have a high diversity of plant species, mangroves are low diversity ecosystems and there are roughly 70 species of mangroves plants (Alongi 2002). The most diverse regions border the Pacific Ocean and west Indian Ocean (Cintrón & Schaeffer-Novelli 1980).

Mangrove species diversity is well known for animals and plants, but poorly known for other organisms such as fungi (Macintosh & Ashton 2002). The study of mangrove fungi began in the 1950's in Australia; however fungal species were reported from these ecosystems earlier by authors who did not study particularly the manglicolous mycota (Schmit & Shearer 2003). The data

Figure 1. Mangrove Forest of Itacorubi, Santa Catarina, Southern Brazil (photo by L. Trierveiler-Pereira).

on mangrove fungi refer mainly to 'marine fungi', which grow and sporulate exclusively in marine or estuarine habitats (Kohlmeyer & Kohlmeyer 1979). In contrast, little is known about terrestrial fungi in mangrove forests (Hyde & Lee 1995).

The most extensive surveys of mangrove xylophilous basidiomycetes focus on corticioid fungi taxonomy (Maekawa et al. 2003, 2005) or polypore ecology (Gilbert & Sousa 2002, Gilbert et al. 2008). A remarkable number of species are recorded from Northern Brazilian mangroves due to the research of Campos et al. (2003) and Sotão et al. (1991, 2002, 2003). Other records correspond to isolated citations in several articles that have not focused exclusively on mangrove xylophilous basidiomycetes.

The objective of the present work is to compile data on mangrove xylophilous basidiomycetes and to present a list of species with the locality and substrate of each one.

Material and methods

This checklist has been compiled based on an intensive search of literature records of xylophilous basidiomycetes in mangroves. Nomenclature, taxonomic position, and author names followed the databases: Index Fungorum – IFS (http://www.indexfungorum.org/Names/Names.asp) and

Figure 2. Basidiomata of *Schizophyllum commune* growing on dead trunk of *Avicennia schaueriana* (photo by L. Trierveiler-Pereira).

the International Plant Names Index – IPNI (http://www.ipni.org). Genera and species are listed alphabetically within each family and order. Genera with taxonomic position not well established are placed in 'incertae sedis'. Names not found either on the IFS database or in the literature were placed in a separated section named 'Doubtful names cited from mangroves'. This checklist only includes records identified to the species level.

Although the compiled list was carefully revised, minor errors can occur. We plan to regularly update the internet version of the checklist, so we gratefully encourage any remarks concerning errors or omitted data.

Results

The 112 xylophilous basidiomycetes species reported from mangroves are distributed among 63 genera, 27 families, and 9 orders. The most represented family is *Polyporaceae* with 33 species, followed by *Hymenochaetaceae* with 15 species. The genus with highest number of species is *Phellinus* with seven species, followed by *Trametes* with six species and *Trichaptum* with five species.

The mangrove areas with the highest number of species recorded are located in Brazil (55 species), Micronesia (19), Japan (17) and Puerto Rico (15). Other localities are represented by eight or fewer reported species.

Rhizophora mangle with 34 species recorded is the most common host, followed by *Bruguiera gymnorhiza* (17) and *Sonneratia alba* (15).

The complete checklist is available on http://www.mycotaxon.com/resources/weblists.html.

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